IN THE CLAIMS

1-15. (canceled)

16. (currently amended) In an appliance communication network, a method for authenticating appliance messages, the method comprising:

maintaining at an appliance communication center a first shared message counter that counts messages communicated between the appliance communication center and a first appliance, the first shared message counter shared between the communication center and ~~a remotely located~~the first appliance;

maintaining at the appliance communication center a second shared message counter that counts messages communicated between the appliance communication center and a second appliance, the second shared message counter provides a count separate from a count provided by the first shared message counter;

generating a first authentication word by applying an appliance message and the first shared message counter, as stored in the communication center, to an authentication algorithm; and

transmitting the appliance message and the first authentication word as an authenticated message to the first appliance.

17. (currently amended) The method of claim 16, further comprising:

receiving the authenticated message at the first appliance;

~~applying the~~applying a third shared message counter, as stored in the first appliance, and the appliance message to the authentication algorithm to generate a second authentication word; and

comparing the first authentication word and the second authentication word to determine authenticity of the authenticated message.

18. (currently amended) The method of claim 17, further comprising incrementing the third shared message counter, as stored in the first appliance, after receiving a genuine authenticated message at the first appliance.

19. (original) The method of claim 16, wherein applying comprises applying an authentication keying variable, K.

20 (currently amended) The method of claim 19, wherein applying comprises:

establishing a working register R, comprising at least bytes R0, R1, R2, R3;

initializing R3 to a directional code, representing a transmission from the appliance communication center to the first appliance;

initializing at least R2, R1, and R0 to ~~the bytes~~a plurality of bytes C2, Cl, and C0 of the first shared message counter, as stored in the communication center, respectively;

iteratively performing at least one arithmetic, logical and shifting operation on R; and

setting the first authentication word equal to the value contained in R.

21. (previously presented) The method of claim 20, wherein iteratively performing at least one arithmetic, logical and shifting operation on R comprises iteratively performing, as many times as there are bytes in K, the steps of:

establishing an index, equal to the greater of:

a non-zero constant; and

a number of bytes in the appliance message less one;

and

iteratively performing, a number of times equal to the index plus one:

forming P as a dot product of R2 and R0;

forming Q as a bitwise exclusive or of P with a constant expression '01010101';

forming S by adding Q to K;

forming S′ by end around rotating S;

forming T as the bitwise exclusive or of S′ and R3;

forming F as the bitwise exclusive or of T with a byte of the appliance message; and

replacing R3 with R2, R2 with R1, R1 with R0, and R0 with F.

22. (original) The method of claim 21, wherein the non-zero constant is at least 3.

23. (canceled)

24. (currently amended) The method of claim 16, further comprising incrementing the first shared message counter, as stored in the communication center, after transmitting the authenticated message to the first appliance.

25. (currently amended) ~~An appliance communication center~~A system comprising:

a plurality of appliances including a first appliance and a second appliance; and

an appliance communication center including:

network connections terminating at the appliances;

a processing circuit;

a memory storing a plurality of shared counters including a first shared message counter and a second shared message counter, ~~each shared~~the first shared message counter shared between the appliance communication center ~~and an~~and the first appliance, the second shared message counter shared between the communication center and the second appliance, the first shared message counter configured to provide a count separate from a count provided by the second shared message counter, the first and second shared message counters configured to be non-resettable, the memory further storing instructions for:

maintaining at an appliance communication ~~center a~~center the first shared message counter~~, the shared message counter shared between the communication center and a remotely located appliance~~;

generating a first authentication word by applying an appliance message and the first shared message counter, as stored in the appliance communication center, to an authentication algorithm; and

transmitting the appliance message and the first authentication word as an authenticated message to the first appliance.

26. (canceled)

27. (currently amended) The appliance communication center of claim 25, wherein the memory further stores instructions for incrementing the first shared message counter, as stored in the appliance communication center, after transmitting the authenticated message to the first appliance.

28. (currently amended) ~~In an appliance, an appliance message authentication device~~A system comprising:

a first appliance including:

a first shared message counter;

a processor; and

a memory coupled to the processor, the memory storing instructions for execution by the processor for:

receiving an authenticated message, including a first authentication word and an appliance message, at the first appliance;

generating a second authentication word by ~~applying a~~applying the first shared message counter, as stored in the first appliance, and the appliance message to an authentication algorithm; and

comparing the first authentication word and the second authentication word to determine authenticity of the authenticated ~~message.~~message;

a second appliance separate from the first appliance; and

an appliance communication center including a second shared message counter and a third shared message counter, the second shared message counter shared between the appliance communication center and the first appliance, the third shared message counter shared between the communication center and the second appliance, and the third shared message counter configured to provide a count separate from a count provided by the second shared message counter.

29. (currently amended) The appliance message authentication device of claim 28, wherein the memory stores instructions for execution by the processor for incrementing the first shared message counter, as stored in the first appliance, after receiving a genuine authenticated message at the first appliance.

30. (currently amended) In an appliance communication network, a method for authenticating appliance messages, the method comprising:

~~maintaining at an~~maintaining at a first appliance a first non-resettable shared message counter, the first non-resettable shared message counter shared between the first appliance and a remotely located appliance communication center;

maintaining at the appliance communication center a second non-resettable shared message counter that counts messages communicated between the appliance communication center and the first appliance;

maintaining at the appliance communication center a third non-resettable shared message counter that counts messages communicated between the appliance communication center and a second appliance, the third non-resettable shared message counter provides a count separate from a count provided by the second non-resettable shared message counter;

generating a first authentication word by applying an appliance message and the first non-resettable shared message counter, as stored in the first appliance, to an authentication algorithm; and

transmitting the appliance message and the first authentication word as an authenticated message to the appliance communication center.

31. (currently amended) The method of claim 30, further comprising:

receiving the authenticated message at the appliance communication center;

applying the second non-resettable shared message counter, as stored in the appliance communication center, and the appliance message to the authentication algorithm to generate a second authentication word; and

comparing the first authentication word and the second authentication word to determine authenticity of the authenticated message.